WHAT IS CLAIMED IS:

1. A Method to maintain Synchronization Tracking in TDD Wireless Communication, the method use in terminal of UE system, characterised in that is comprises:

a. dividing midamble into two parts, then detecting the first one and the second one of the midamble one by one;

b. the auto-correlation property operation between the two parts mention above and the corresponding to local midamble, then two peaks are got;

c. compare the two peaks amplitude; and

d. confirming to advance or retard local time base on the result of the compare.

2. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 1 characterised in that said sample frequency of detecting midamble is only one time of the chip rate of TD-SCDMA system.

3. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 1 characterised in that said midamble is divided into two parts having same length.

4. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 2 characterised in that said midamble is divided into odd part and even part.

5. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 4 characterised in that said sampling time point for detecting midamble are:

$(n-\Omega)Tc$, when n is even; and

$(n+\Omega)Tc$, when n is odd, wherein

n is the location of chip, Ω is a value set lower than 1, and T c is the times of chip.

6. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 4 characterised in that if the peak amplitude of even part is higher than the peak amplitude of odd part, advance the local timer by +T c /16, if the peak amplitude of odd part is higher than the peak amplitude of even part, advance the local timer by -T c /16.

7. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 4, characterised in when the distance between UE and Node-B is changed because of movement, UE can make decision after comparing auto-correlation peak of odd part and even part in as many as M subframes, there can be as many as M comparison results, if positive results are more than a set value, then local timer advances ΩT c , on the contrary, local timer retards ΩT c.

8. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 7, characterised in that if neither the number of positive or negative results is more than the set value, local timer remains unchanged.

9. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 7, characterised in that said the set value is $\left\lfloor M(1+\Delta)\Big/2 \right\rfloor$, here Δ is protection margin.

10. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 5, characterised in that said Ω is lower than 1/4.

11. The Method to maintain Synchronization Tracking in TDD Wireless Communication of claim 9, characterised in that said Δ is 0.1.

12. The Method to maintain Synchronization Tracking in TDD Wireless

Communication of claim 1, characterised in that said midamble is the downlink synchronization.

13. A terminal of UE system in TDD Wireless Communication, characterised in that is comprises:

5   divider which divided midamble into two parts;

dot product which do auto-correlation property operation between the two parts mention above and the corresponding to local midamble;

comparer which compare the two peaks amplitude;

the local timer which decided to advance or retard base on the result of the
10   compare;

said equipments connected one by one.

14. A terminal of UE system in TDD Wireless Communication of claim 13, characterised in that said divider who divided midamble into two parts which having same length.

15   15. A terminal of UE system in TDD Wireless Communication of claim 14, characterised in that said midamble is divided into odd part and even part.

16. A terminal of UE system in TDD Wireless Communication of claim 13, characterised in that said comparer compare as: if the peak amplitude of even part is higher than the peak amplitude of odd part, advance the local timer by $\Omega T c$, if
20   the peak amplitude of odd part is higher than the peak amplitude of even part, advance the local timer by $\Omega T c$, here said Ω is a value set lower than 1, T c is the times of chip.

17. A terminal of UE system in TDD Wireless Communication of claim 13,

characterised in that said midamble is the downlink synchronization.

18. A terminal of UE system in TDD Wireless Communication of claim 13, characterised in that said Ω is lower than 1/4.